HPE Integrity Superdome 2 - Overview

Product description

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Product description

HPE Superdome 2 (SD2) is an HPE Integrity server that represents a new category of modular, mission-critical systems that scale up, out, and within to consolidate all tiers of critical applications on a common platform. Engineered with trusted Superdome reliability, Superdome 2 includes a modular, bladed design, and common components to other HPE c-Class BladeSystems. This also includes a common server management framework, supported from x86 to Superdome. This latest generation Superdome server extends the resiliency of multiple generations of HPE high-end servers with 100+ mission critical innovations. With break through innovations such as the Superdome 2 crossbar fabric and Superdome 2 analysis engine coupled with rich virtualization capabilities, Superdome 2 sets the standard for the next decade of mission-critical computing.

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Product features

Feature	Description
Key features and benefits	HPE Superdome 2 offers enhanced features to increase scalability, improve memory, and provide better compute power without compromising performance. Green efficiencies from HPE blades are now engineered into Superdome 2. It can scale from 2 to 32 sockets. HPE Superdome 2 offers: • Support for 8 socket (8s), 16 socket (16s), and 32 socket (32s) Superdome 2 servers • The Intel Itanium Processor 9700 series 8c, with up to 32 sockets, provides up to 256 cores of compute power • 512 Dual In-line Memory Module (DIMM) slots with up to 8 TB of DDR3 memory with double-chip spare, providing a large memory footprint for the most demanding applications • 64 built in 10 GbE ports • Full suite of capacity on demand capabilities: HPE Pay Per Use (PPU), iCAP, GiCAP, and TiCAP • Built-in shared DVD • Upgrade paths from Superdome 2-8s to Superdome 2-16s and Superdome 2-16 to Superdome 2-32s socket SMP

<table>
<tr><th>Feature</th><th>Description</th></tr>
<tr><td>Superdome 2 product family - Maximum capabilities</td><td>
<table>
<tr><th rowspan="2">Features</th><th>Superdome 2-8s</th><th>Superdome 2-16s</th><th>Superdome 2-32s</th></tr>
<tr><th>16s with 8 socket SMP</th><th>16s with 16 socket SMP</th><th>32s with 32 socket SMP</th></tr>
<tr><td>Max</td><td>4 max IOX (4 U)</td><td>8 max IOX (4 U)</td><td>8 max IOX (4 U)</td></tr>
<tr><td>Sockets</td><td>16 (8 per nPartition)</td><td>16</td><td>32</td></tr>
<tr><td>Cores</td><td>128</td><td>128</td><td>256</td></tr>
<tr><td>Memory</td><td>4TB</td><td>4TB</td><td>8TB</td></tr>
<tr><td>10 GbE</td><td>32 Internal</td><td>32 Internal</td><td>64 Internal</td></tr>
<tr><td>PCIe</td><td>48 IOX</td><td>96 IOX</td><td>96 IOX</td></tr>
</table>
</td></tr>
<tr><td>HPE Superdome 2 server Blade (CB900c i6) processors</td><td>The Superdome 2 CB900s i6 server blade is populated with two processors
• Intel Itanium processor 9760 8c
• Intel Itanium processor 9740 8c
• Intel Itanium processor 9540 8c
• Intel Itanium processor 9560 8c</td></tr>
<tr><td>CPU mixing support</td><td>Superdome 2 governing rules for mixing processors are as follows:
• No mixing of processor families or blade types within a nPartition
• No support for processors running at different frequencies or different cache sizes within the same nPartition enabled
• Processor modules on a blade must be the same revision, frequency, and cache size
• Mixing of processors with different frequencies and/or cache sizes will be NOT allowed within a nPartition
• Mixing of CB900s i2, CB900s i4 and CB900s i6 blades within a complex is allowed; However, mixing of blade types within a nPartition is not supported</td></tr>
<tr><td>Chipset</td><td>HPE sx3000</td></tr>
<tr><td>Upgradability and scalability</td><td>Superdome 2 is scalable from 8 socket configurations to 32 socket configurations</td></tr>
<tr><td>Cache memory</td><td>For Intel Itanium Processor 9760 and 9740 8c:
• L1 cache 16KB per core (Instr)
• L1 cache 16KB per core (Data)
• L2 cache 512KB per core (Instr)
• L2 cache 256KB per core (Data)
• L3 cache 24MB per socket shared by 8 cores (9540)
• L3 cache 32MB per socket shared by 8 cores (9560)
• L4 cache 64MB per socket
• Superdome 2-8s: minimum: 32GB (4 x 8GB) / maximum: 4TB (256 x 16GB)
• Superdome 2-16s: minimum: 32 GB (4 x 8GB) / maximum: 4TB (256 x 16GB)
• Superdome 2-32s: minimum: 64GB (4 x 8GB per enclosure) / maximum : 8TB (512 x 16GB)</td></tr>
<tr><td>Memory type registered</td><td>• 8 GB single rank PC3L-12800R DDR3 ECC memory registered DIMMS for CB900s i6
• 16 GB dual rank PC3L-12800R DDR3 ECC memory registered DIMMS for CB90</td></tr>
<tr><td>Memory protection</td><td>Error Checking and Correcting (ECC) on memory and caches; Double-chip spare</td></tr>
<tr><td>I/O slots - external</td><td>• Superdome 2-8s : 48 external PCIe 8x Gen2
• Superdome 2-16s : 96 external PCIe 8x Gen2
• Superdome 2-32s : 96 external PCIe 8x Gen2</td></tr>
<tr><td>Built in networking</td><td>• Superdome 2-8s: 32 10 GbE NIC ports max (Four per blade)
• Superdome 2-16s: 32 10 GbE NIC ports max (Four per blade)
• Superdome 2-32s: 64 10 GbE NIC ports max (Four per blade)</td></tr>
</table>

Feature	Description	
Partitioning	**Superdome 2-8s**	8 socket electrically isolated nPars
	Superdome 2-16s	16 socket electrically isolated nPars
	Superdome 2-32s	32 socket electrically isolated nPars
Capacity on demand	PPU, iCAP, TiCAP, GiCAP	
Form factor	**Superdome 2-8s**	18U enclosure 4U IOX enclosure HPE 600 mm wide 42U intelligent series rack with standard rack doo
	Superdome 2-16s	18U enclosure 4U IOX enclosure HPE 600 mm wide 42U intelligent series rack with the Superdome 2 door and active status display
	Superdome 2-32s	Two 18U enclosures in single HPE 600 mm wide 42U intelligent series rack with the Superdome 2 door and active status display4U IOX enclosures in a separate HPE intelligent series rack
High availability-standard server features	• 2N (N+N) redundant power supplies • N+1 fans (Or greater depending on the load) • Online, replaceable, and redundant OA, utilities, clock, and service processor subsystems • Fault tolerant crossbar fabric built on dynamic multi-pathing and end-to-end retry technology • Enhanced MCA recovery (Automated processor recovery) with intel cache fail-safe technolog • ECC on caches, memory ECC, and double-chip spare • ECC, re-tries, and link width reduction on data paths • Automatic de-configuration of memory and processors • I/O advanced error recovery, and I/O isolation off crossbar fabric • Redundant network paths • Redundant fibre channel paths	
I/O	Interfaces VGA and 2 USB ports for local human interface; 1 RS-232 serial port and 10/100Base-T LAN for integrity Integrated Lights-Out (iLO 3) management	
Intel Itanium 9700 series general	The Superdome 2 compute enclosure is the building block of the 8s, 16s, and 32s systems. Each Superdome 2 compute enclosure supports 15 fans, 12 power supplies, associated power cords, and four HPE Crossbar Fabric Modules (XFMs). The product names for Superdome 2 are: • Superdome 2 8 socket /Superdome 2-8s/8s • Superdome 2 16 socket / Superdome 2-16s/16s • Superdome 2 32 socket / Superdome 2-32s/32s	
Superdome 2 - 8s	• The Superdome 2-8s system can support up to eight Superdome 2 server blades (CB900s i6) • The Superdome 2-8s compute enclosure is physically the same compute enclosure as the Superdome 2-16s, but the Superdome 2-8s system is limited to up to four blades per nPartition • Although the computer enclosure for both systems is the same, the product number for each system (Superdome 2-8s and Superdome 2-16s) is different • The OS licensing is different between the Superdome 2-8s and Superdome 2-16s • A minimum of one and maximum of four Superdome 2 IOX enclosures per Superdome 2-8s system is supported	
Superdome 2 - 16s	• The Superdome 2-16s system can support up to eight Superdome 2 server blades (CB900s i6) • A minimum of one and up to eight Superdome 2 IOX enclosures per Superdome 2-16s system is supported • The Superdome 2 active status door display is included when the Superdome 2-16s is ordered factory integrated into a rack	

Feature	Description
Superdome 2 - 32s	- The Superdome 2-32s system is comprised of two compute enclosures - The system supports up to 16 Superdome 2 server blades (CB900s i2 and/or CB900s i6) - Eight Superdome 2 server blades per compute enclosure - A minimum of one and up to eight Superdome 2 IOX enclosures per Superdome 2-32s system is supported - The Superdome 2 active status door display is included when the Superdome 2-32s is ordered factory integrated into a rack

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Software overview

Feature	Description
HP-UX 11iv3 operating environments and software	- The supported operating environment for HPE Superdome 2 is HP-UX 11iv3. HP-UX 11i v3 comes with a set of features that can provide more value for users investment. - HP-UX 11i v3 is designed to simplify and unify IT, and deliver the always-on resiliency, dynamic optimization of resources, and investment protection and stability demanded in mission-critical computing. - It integrates proven UNIX functionality with advances in high availability, security, partitioning, workload management, and instant-capacity-on-demand. - This is delivered within the industry's first mission-critical converged infrastructure, to drive up flexibility, while reducing risk, and delivering compelling value. Click here to access HP-UX 11i v3 QuickSpecs for reference .

NOTE: Licensing is on a per-socket basis

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Link to product specification

Click here to view the HPE Integrity Superdome 2 specification page .

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Link to warranty information

Click here to check the warranty status .

Click here for detailed information regarding worldwide limited warranty and technical support .

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Link to QuickSpecs

Information for this Overview is taken from the product QuickSpecs. To access the complete QuickSpecs for this product, select the desired link from the following list:

- Click here to access the HPE Integrity Superdome 2 Worldwide QuickSpecs in html format .
- Click here to access the HPE Integrity Superdome 2 Worldwide QuickSpecs in pdf format .
- Click here to access the QuickSpecs homepage, which provides access to the QuickSpecs for other regions/countries .

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Link to driver, firmware, software and manuals

Click here to access the updated driver, firmware, software and user manuals .

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Link to product related documents

Click here to view a list of product related documents .

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